

Response to Final Office Action  
Docket No. 013.0171.US.UTL

**REMARKS**

Claims 1-44 remain in this application. Claims 1-44 are pending. Claim 21 has been amended. No new matter has been entered.

5 Claim 21 has been amended to correct a clerical error and to present the rejected claims in better form for consideration on appeal. No claim has been amended in response to the 35 U.S.C. 103(a) rejections. The amendments do not touch on the merits, so the amendments may be admitted without a showing of good and sufficient reasons why the amendments were necessary and were not earlier presented. 37 C.F.R. 1.116. Entry of the amendments is respectfully  
10 requested.

Claims 1-44 again stand rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 6,510,406, to Marchisio ("Marchisio"), in view of U.S. Patent No. 6,701,305, to Holt et al. ("Holt"). Applicant confirms that the subject matter of the various claims was commonly owned at the time of any inventions  
15 covered therein. Applicant traverses the rejection.

To establish a *prima facie* case of obviousness, the examiner has the burden of proving that (1) there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the reference teachings; (2)  
20 there is a reasonable expectation of success; and (3) the combined references teach or suggest all the claim limitations. MPEP § 2143.

A *prima facie* case of obviousness has not been shown. A complete reply in compliance with 37 C.F.R. 1.111(b) was provided in the Response to First Office Action ("Response"), filed on August 27, 2004, which distinctly and  
25 specifically pointed out the supposed errors in the examiner's action. In the Response, the Marchisio and Holt references were summarized and arguments pointing out the specific distinctions believed to render the claims patentable over the applied references were made. Independent claims 1, 9, 18, and 31 were discussed in detail and the discussion specifically pointed out how the language of  
30 those claims patentably distinguished the claims from the references. No general allegation that the claims define a patentable invention was made.

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To briefly review the arguments presented in the Response, Marchisio fails to provide a suggestion or motivation to modify or combine with the reference teachings of Holt. First, Marchisio teaches formulating a constrained optimization problem in a *linear transform space* based on a term-spread matrix, error-covariance matrix and the user query vector, with the term-spread matrix corresponding to a weighted autocorrelation of the term-document matrix and indicating an amount of variation in term usage in the information files and extent to which the terms are correlated (Col. 22, lines 14-44). In contrast, Holt teaches utilizing *multidimensional subspaces* to represent semantic relationships that exist in a set of documents, wherein the documents are represented using a subspace transformation based on the distribution of the occurrence of terms in the documents (Col. 1, lines 19-23). Holt teaches away from the use of traditional vector space methods, such as used by Marchisio (*see*, Holt, Col. 2, lines 30-57), in favor of subspace transformations, by distinguishing the vector space methods as having performance severely limited by the size of the document collection, particularly with respect to recomputation of term weighting factors (Col. 2, line 64 through Col. 3, line 9; Col. 5, lines 30-40). *See, McGinley, The Franklin Sports, Inc.*, 262 F.3d 1339, 60 U.S.P.Q.2d 1001 (Fed. Cir. 2001) (evidence that references taught away from combination and would produce inoperative result probative of non-obviousness). As a result, one of ordinary skill in the art would not find a suggestion or motivation to combine the teachings of Marchisio with the teachings of Holt.

Second, one of ordinary skill in the art would not have a reasonable expectation of success in combining the teachings of Marchisio and Holt. The traditional term weighting approach taught by Marchisio (Col. 7, lines 10-17) is rejected by Holt as requiring relatively time consuming and processing intensive recomputation upon the addition of new documents or removal of old documents from the document collection, as well as being unsuitable for some applications, such as the assignment of topic words, that is, words automatically generated to summarize a document (*see*, Holt, Col. 5, lines 32-46). Thus, combining the teachings of Marchisio and Holt would not result in a successful combination

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Third, the combined references of Marchisio and Holt fail to teach or suggest all claim limitations. Marchisio teaches adding a new *row* to the term-document matrix for each *phrase* in the user query, where each cell in the new row contains the frequency of occurrence of the phrase within the respective electronic information file, as determined by the frequencies of occurrence of individual terms composing the phrase and the proximity of such concepts, as determined by their relative positions in the electronic information files, as indicated by the elements of the auxiliary data structure. Thus, the term-document matrix grows, row-by-row, based on the phrases occurring in the user query, whereas the frequency of occurrences of concepts recited by Claims 1, 9, 18, and 31 are determined for the set of documents without reference to user query phrases, as taught by Marchisio. In particular, Claim 1 recites "a histogram module determining a frequency of occurrences of concepts in a set of unstructured documents;" Claim 9 recites "determining a frequency of occurrences of concepts in a set of unstructured documents;" Claim 18 recites "an extraction module extracting a multiplicity of concepts from a set of unstructured documents into a lexicon uniquely identifying each concept and a frequency of occurrence;" and Claim 31 recites "extracting a multiplicity of concepts from a set of unstructured documents into a lexicon uniquely identifying each concept and a frequency of occurrence."

Marchisio further teaches an auxiliary data structure that permits reforming of the term-document matrix to include rows corresponding to phrases in the user query for the purposes of processing that query. Thus, the rows in the auxiliary data structure are also dependent upon the phrases occurring in the user query, whereas the subsets of concepts recited by Claims 1, 9, 18, and 31 are selected out of the frequency of occurrences without reference to user query phrases, as taught by Marchisio. In particular, Claim 1 recites "a selection module selecting a subset of concepts out of the frequency of occurrences;" Claim 9 recites "selecting a subset of concepts out of the frequency of occurrences;" Claim 18 recites "a concept selection module selecting a subset of concepts from the frequency of occurrence representation filtered against a minimal set of

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concepts each referenced in at least two documents with no document in the corpus being unreferenced;" and Claim 31 recites "selecting a subset of concepts from the frequency of occurrence representation filtered against a minimal set of concepts each referenced in at least two documents with no document in the  
5 corpus being unreferenced."

Marchisio further teaches assigning weights to the *elements* of the term-document matrix, whereas the weights recited by Claims 1, 9, 18, and 31 are assigned to one or more *clusters* of concepts for each group of concepts and not to a matrix, as taught by Marchisio. In particular, Claim 1 recites "a selection  
10 module . . . assigning weights to one or more clusters of concepts for each group of concepts;" Claim 9 recites "assigning weights to one or more clusters of concepts for each group of concepts;" Claim 18 recites "a group generation module generating a group of weighted clusters of concepts selected from the concepts subset;" and Claim 31 recites "generating a group of weighted clusters  
15 of concepts selected from the concepts subset."

Holt teaches evaluating a score vector to determine the relative performance of the documents against the *user query*. The documents to return to a user are selected in a variety of methods, typically by returning the best scoring documents identified, for example, by applying a threshold to the individual  
20 scores, by taking a fixed number in ranked order, or by statistical or clustering techniques applied to the vectors of the scores. In contrast, the best fit approximation recited by Claims 1, 9, 18, and 31 is calculated for each document indexed by each such group of concepts between the frequency of occurrences and the weighted cluster for each such concept grouped into the group of concepts  
25 and without reference to a user query, as taught by Holt. In particular, Claim 1 recites "a best fit module calculating a best fit approximation for each document indexed by each such group of concepts between the frequency of occurrences and the weighted cluster for each such concept grouped into the group of concepts;" Claim 9 recites "calculating a best fit approximation for each  
30 document indexed by each such group of concepts between the frequency of occurrences and the weighted cluster for each such concept grouped into the

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group of concepts;" Claim 18 recites "a best fit module determining a matrix of best fit approximations for each document weighted against each group of weighted clusters of concepts;" and Claim 31 recites "determining a matrix of best fit approximations for each document weighted against each group of weighted clusters of concepts."

5 Lastly, the limitations recited in the last elements of Claims 1 and 9 are being improperly parsed to show obviousness. The last element of Claim 1 recites "a best fit module calculating a best fit approximation for each document *indexed by each such group of concepts between the frequency of occurrences*  
10 *and the weighted cluster* for each such concept grouped into the group of concepts" and the last element of Claim 9 recites "calculating a best fit approximation for each document *indexed by each such group of concepts between the frequency of occurrences and the weighted cluster* for each such concept grouped into the group of concepts" (emphasis added). The italicized  
15 language includes limitations, "*indexed by each such group of concepts*" and "*between the frequency of occurrences and the weighted cluster,*" which respectively modify how each document is indexed and the values between which the best fit approximation is calculated. To excise these limitations from the last element is error when interpreting the claim as a whole and these limitations have  
20 been taken out of these claims to allow the remaining parts of the last elements to read on the Marchisio reference. Obviousness may not be established by picking and choosing from an art reference only so much of the reference as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. *Bausch &*  
25 *Lomb, Inc. v. Barnes-Hind, Inc.*, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986). Thus, the combined references of Marchisio and Holt fail to teach or suggest all claim limitations.

Thus, a *prima facie* case of obviousness has not been shown with respect to Claims 1, 9, 18, and 31. Claims 2-8 are dependent on Claim 1 and are  
30 patentable for the above-stated reasons, and as further distinguished by the limitations recited therein. Claims 10-17 are dependent on Claim 9 and are

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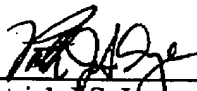
patentable for the above-stated reasons, and as further distinguished by the limitations recited therein. Claims 19-30 are dependent on Claim 18 and are patentable for the above-stated reasons, and as further distinguished by the limitations recited therein. Claims 32-44 are dependent on Claim 31 and are  
5 patentable for the above-stated reasons, and as further distinguished by the limitations recited herein. Accordingly, as a *prima facie* case of obviousness has not been shown for Claims 1-44, withdrawal of the rejection for obviousness under 35 U.S.C. §103(a) is requested.

The prior art made of record and not relied upon has been reviewed by the  
10 applicant and is considered to be no more pertinent than the prior art references already applied.

Claims 1-44 are believed to be in a condition for allowance. Entry of the foregoing amendments is requested. Reconsideration of the claims, withdrawal of the finality of the Office action and a Notice of Allowance are earnestly solicited.  
15 Please contact the undersigned at (206) 381-3900 regarding any questions or concerns associated with the present matter.

Respectfully submitted,

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